

REMARKS

Administrative Overview

The office action rejects claims 1-12 and 14-23 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,703,717 to Ezra (“Ezra”). Additionally, claim 15 is rejected under 35 U.S.C. § 103(a) as obvious in light of Ezra and Hecht. The Applicants respectfully traverse these rejections and request reconsideration of the claims in light of the arguments provided below.

Ezra Fails to Teach or Suggest the Invention

Claims 1 and 12 stand rejected as anticipated by Ezra. Claims 1 and 12 recite, respectively, an apparatus and a method for reproducing visual information at “a *finite conjugate region* in *free space*.” For the reasons set forth below, we submit that the use of finite conjugates in general and, in particular, the reproduction of visual information to a finite conjugate region in free space are not disclosed or even suggested by Ezra.

Generally, conjugate points are a pair of points that share an invariable relationship to each other such as, for example, the object and image points of a lens system. In this example, both points are positioned, in relation to a lens, such that light emitted from either point converges to and then diverges from the other. (See Figures 2 and 5 of the present application for examples.) Finite conjugates differ from infinite conjugates in that one or both points are not positioned or focused at infinity, as is the case in *afocal systems*. As such, the Applicants’ claimed “*finite-conjugate system ... yields a magnified real image projected to a corresponding location in free space.*” (Page 16, lines 17-19 of the specification; emphasis added) In other words, Applicants’ system is *not* focused at infinity and is *not* afocal.

Ezra describes a projection display system that incorporates an angular amplifier in combination with one or more projectors. Specifically, the angular amplifier is a dual-sided lens array. This angular amplifier expands the projector’s narrow beam. In turn, perceptible stereoscopic views are achieved through the increased angular spread.

Moreover, Ezra et al. specify that the angular amplifier is similar to that disclosed in *The Formation of Integral Images by Afocal Pairs of Lens Arrays* by Hurley et al. (See Col. 4, lines 14-19.) This specific citation to an *afocal lens system* is consistent with Ezra’s overall *afocal*

approach. Ezra's system is "afocal" in the sense that there is no focal point formed in front of an observer by the angular amplifier, but only a resizing of the visual input. Thus, the images created by Ezra's afocal system are *virtual images* directed to the eyes of an observer and not *real images* formed in *free space*, in direct contradiction to the present invention. Ezra's use of an afocal pair of lens arrays results in a system that lacks *finite conjugate* real-imaging capability.

In the office action, the Examiner refers to Ezra's viewing zones and cites col. 3, lines 38-40 for the proposition that Ezra discloses reproducing visual information to finite conjugate regions in free space. In fact, the cited language simply states that:

Thus, a different 2D view will be seen by the eyes of an observer when located at the images 31 of the illuminators 22 and 25.

It is unclear why the Examiner infers from this statement that Ezra teaches finite conjugates. In fact, finite conjugates are diametrically opposed to Ezra's approach and it is not surprising that Ezra does not describe conjugates, finite or otherwise. Indeed, the images 31 referenced by the Examiner actually comport with the Applicants' contention that Ezra teaches an afocal virtual image-based approach as discussed above. This is because of the way an observer receives Ezra's images.

In particular, throughout Ezra's disclosure, the image 31 cited by the Examiner is generally referred to as a viewing zone 31. (See Ezra's Figure 4 and Figures 7-10.) In Ezra, stereoscopic views are seen when an observer's eyes each occupy different neighboring viewing zones. Thus, Ezra uses the conventional notion of a viewing zone as a location where a particular afocal, virtual image is formed on an observer's retina. A real image is never generated at a viewing zone location, either in free space or upon a surface. If a finite conjugate region could actually be formed within one of Ezra's viewing zone locations, light would be dispersed across the retina, creating near-perfect diffusion (total blur, zero resolution). Such an effect is not contemplated or desired by Ezra. Consequently, there is no capability or teaching in Ezra for *free-space imaging* or *finite conjugate* formation as required by pending claims 1 and 12.

For at least these reasons, Applicants submit that amended claims 1 and 12 are patentable over Ezra. Because claims 1 and 12 are patentable thereover, it follows that the remaining claims

are patentable as well. Accordingly, Applicants respectfully request reconsideration and withdrawal of these rejections.

CONCLUSION

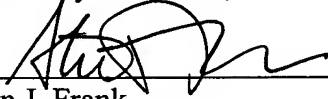
Applicants submit that on the basis of the foregoing remarks, claims 1-23 are in condition for allowance. Should any further issues of patentability be determined to exist, the Examiner is invited to contact the undersigned by telephone to expedite the favorable prosecution of this application.

In light of the foregoing, we submit that all claims are now in condition for allowance.

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Respectfully submitted,



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